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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,143	12/07/2004	Masashito Higashida	DK-US030105	6838

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EXAMINER	
WIEHE, NATHANIEL EDWARD	

ART UNIT	PAPER NUMBER
3745	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/517,143	HIGASHIDA, MASASHITO	
	Examiner	Art Unit	
	Nathan Wiehe	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 December 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12072004; 10122005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 7 December 2004 and 12 October 2005 are noted. The submissions are in compliance with the provisions of 37 CFR 1.97 and 1.98. Accordingly, the information disclosure statements are being considered by the examiner.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ratio of the length between .8 and 1.4 (Claim 3), specifically an embodiment including a ratio that is less than 1 is not shown, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,8-11,14,16,17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsunaga (5,813,831). Matsunaga discloses a centrifugal fan including an impeller (72) and a bell-mouth (76) having an inlet and an annularly formed recessed part (78). The bell-mouth (76) further includes a flat part (74b) extending radial outward from the recessed part and a curved part (76) extending on the inner circumferential side in the radial direction of the recessed part toward the impeller side where a plane

formed on the side opposite the impeller by virtually liking the connecting portion between the flat part (74b) and the connecting portion is substantially orthogonal to the rotational axis. Matsunaga's impeller further includes a plurality of blades (71) whose end parts are fixed to a main plate that has a shape corresponding to the recessed part. Matsunaga's fan uses a scroll shaped housing (74) having an opposing inlet and outlet (75a), See Fig. 3.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3,15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga. Matsunaga discloses the invention substantially as claimed except for the specific length ratios claimed. Since applicant has not disclosed that having a length ratio greater than or equal to 0.8 and less than 1.4 solves any stated problem or is for any particular purpose above the fact that the recessed portion relative to the impeller reduces the turbulence caused by the turning flow around the main plate and it appears that the centrifugal fan of Matsunaga would perform equally well with the ratio as claimed by applicant, it would have been an obvious matter of design choice to modify the centrifugal fan of Matsunaga by utilizing the length ratio as claimed for the purpose of reducing the turbulence caused by the turning flow.

Claims 4,5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga. Matsunaga discloses connecting portion between the flat art and the recessed part having an angle between 20 and 60 degrees. Since applicant has not disclosed that having an angle greater than 60 and less than 90 degrees solves any stated problem or is for any particular purpose above the fact that the recessed portion provides a negative pressure space to reduce flow separation and it appears that the centrifugal fan of Matsunaga would perform equally well with the angle as claimed by applicant, it would have been an obvious matter of design choice to modify the centrifugal fan of Matsunaga by utilizing the angle as claimed for the purpose providing a negative pressure space.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga in view of Matsushita (JP 63-80097 A). Matsunaga discloses the invention substantially a claimed except for the use of a plurality of protruding parts arranged around the bell-mouth. Matsushita discloses a centrifugal fan including a plurality of protruding parts in the form of guide vanes distributed around the bell-mouth that stabilizes the inlet airflow into the centrifugal fan. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the centrifugal fan of Matsunaga by including protruding parts as taught by Matsushita in order to stabilize the inlet air flow into the centrifugal fan.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga in view of Daikin (JP 2003-013888 A). Matsunaga discloses the invention substantially as claimed except for the use of interblade parts. Daikin discloses a

centrifugal fan including an impeller having a plurality of blades (33) connected to a main plate (61) and including a plurality of interblade parts (65) cut out from the main plate on the front sides in the rotational direction. Daikin's interblade parts reduce turbulent vortices and the noise of the fan. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the centrifugal fan of Matsunaga by including interblade parts as taught by Daikin in order to reduce turbulent vortices and fan noise.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Wiehe whose telephone number is (571)272-8648. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathan Wiehe
Examiner
Art Unit 3745

EDWARD K. LOOK
SUPERVISORY PATENT EXAMINER
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5/25/06